DOCUMENT RESUME

ED 390 001 CG 026 747

AUTHOR Knutson, Kari A.; Farley, Frank
TITLE Type T Personality and Learning Strategies.
PUB DATE Apr 95
NOTE 21p.; Paper presented at the Annual Meeting of the American Educational Research Association (San Francisco, CA, April 18-22, 1995).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Academic Achievement; Cognitive Style; College Students; Higher Education; Individual Differences; *Learning Strategies; Personality Measures; *Personality Traits; Sex Differences; Undergraduate Students
IDENTIFIERS *Type T Behavior

ABSTRACT

Type T personality is a personality dimension which characterizes individuals along a continuum ranging from those who are stimulated by risk-taking, stimulation-seeking and thrill-seeking (Big T) to those who are risk, stimulation, and thrill-avoiding (Little t). This study was designed to assess the relationship between Type T personality and the use of learning strategies. Because the use of learning strategies has been demonstrated to impact educational achievement, there are educational implications for this research. A sample of college students (n=256) was administered a measure of Type T personality and a measure of learning strategy use. Results did not indicate that Big T and Little T use of learning strategies was related to academic achievement, but did suggest that differences exist in strategy use in the short-term versus the long-term. Study results provided a clearer picture of females than males. Finally, factor and regression analysis resulted in the identification of Big T and Little t profiles of learning strategy use. Educational implications are offered. Five tables account for approximately one-third of the document. (Author/JBJ)

**********
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
**********

ED 390 001

# TYPE T PERSONALITY AND LEARNING STRATEGIES

Kari A. Knutson

Arizona State University

Frank Farley

Temple University

Presented at the annual meeting of the American Educational Research Association, San Francisco, CA, April, 1995.

BEST COPY AVAILABLE

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

K. KNUTSON

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

CG026747

ABSTRACT

Type T personality is a personality dimension which characterizes individuals along a continuum ranging from those who are stimulated by risk-taking, stimulation-seeking and thrill-seeking (Big T) to those who are risk, stimulation, and thrill-avoiding (Little t). The following study was designed to assess the relationship between Type T personality and the use of learning strategies. Because the use of learning strategies has been demonstrated to impact educational achievement, there are educational implications for this research. A sample of college students was administered a measure of Type T personality and a measure of learning strategy use. Factor and regression analysis resulted in the identification of Big T and Little t profiles of learning strategy use. Educational implications are offered.

This project examined the relationship between student personality and student use of learning strategies. It was hypothesized that personality differences, in this case, those between students characterized as Big T's, high stimulation-seeking, thrill-seeking, risk-taking individuals, and students characterized as Little t's, stimulation, thrill, and risk-avoiders (Farley, 1986) would be related to different patterns of learning strategy use. This exploratory study attempts to identify learning strategy "profiles" for Big T and Little t students. Big T and Little t students are motivated by different mechanisms to achieve differing ends. It was therefore expected that they would be differentially motivated in the selection and use of learning strategies.

Although a relatively large number of research studies have examined the use of learning strategies, few have focused on the relationship between personality and learning strategy use. Since the literature on learning strategies has generally supported a positive relationship between strategy use and academic achievement, e.g., Weinstein, Goetz, and Alexander (1988), an understanding of individual differences in strategy use also has implications for educational practice and student achievement. Student use of particular strategies may have implications for task success as well. For example, if the goal of an assignment is critical thinking or creative output, elaboration strategies may be more appropriate, whereas if the goal of an assignment is for students to remember some exact facts as provided by a teacher, strategies such as rehearsal and organization may be more effective.

It is assumed that a primary function of education is to provide the most appropriate schooling and opportunities for each student. Though this is difficult in practice, an understanding of the relationship between student

personality and the use of various learning tools allows educators to improve service-delivery to more effectively meet the needs of each individual in their classroom. With an awareness of the strategies students are motivated to use, educators have the opportunity to encourage strategy use by suggesting those more naturally acceptable to particular students. It also allows educators to examine the relationship between the strategies students are using and task demands. Students may benefit by suggestions to adapt strategies for task demands or by being aware of alternative strategies. Students should be conscious of these issues so that they can be more effective, self-regulating learners.

The literature examined for this study reviews previous research on Type T personality and the relationship between personality and learning strategy use. The Type T Personalty, as described by Farley (1980), characterizes individuals along a continuum ranging from those motivated by risk-taking and thrill-seeking (Big T) to those who are risk and thrill avoiders (Little t). Big T individuals are hypothesized to prefer high levels of stimulation, complexity, and are distinguished by flexibility in thinking styles. Little t individuals, in contrast, appear overwhelmed by high levels of stimulation, desiring routine, simplicity, certainty, and predictability.

Findings from previously conducted studies and theoretical papers on Type T Personality which have direct relevance for the present examination include implications of this theory for the classroom and research directed at cognitive processing. Classroom implications of Type T suggest dramatically different environments for Big T and Little t students. For Big T students, all aspects of the learning environment should be highly stimulating, while the learning environment of Little t students should be highly structured and

low in stimulation. Big T students will most likely be very resistant to regimented or rote learning, they will be much more responsive in a learning environment with variety and stimulation. Little t students, on the other hand, prefer a highly structured environment. They feel uncomfortable or anxious is a "high-stimulation" environment (Farley, 1986). Suggestions for adaptive education for Big T and Little t students are provided by Farley (1986, p. 50) in Table 1.

Research conducted by Farley (1985) also suggests differences between Big T and Little t students in cognitive processing. Farley proposed that Big T's are more transmutative thinkers, that is, they are more able to transform or transmute one cognitive process into another with ease and flexibility. Little t's, in contrast, are more disassociative in thinking, less able to readily transform one way of seeing things into another. It was hypothesized that Big T individuals demonstrate more interrelatedness of cognitive processing and have a more highly related associative net in memory. Little t individuals, on the other hand, were hypothesized to have lesser interrelatedness of cognitive processing and less interrelated associative nets in memory.

Investigators who have examined the link between personality and learning strategies have found relationships between personality and the following factors:

1) Study environment management.
Extroverts chose study locations that provided high levels of external stimulation (Campbell & Hawley, 1982);
2) Study methods and stability.
Introversion related to study methods and stability (Entwistle & Entwistle, 1970);
3) Academic performance.
Performance on academic tasks presumed influenced by personality factors via the study process, including the use of learning strategies (Biggs, 1978);

4) Strategy choices.
Perceptive types did not prefer a structured learning environment, but rather preferred a noisy environment where they could manipulate objects. Introverts preferred learning through lecture. Extroverts did not prefer to learn or study independently (Fourqurean, Meisgeier, & Swank, 1990).
Feeling types were better at verbal based strategies and at concepts related to people. Perceivers were better at tasks requiring cognitive control and attention. Thinking types demonstrated a greater rate of logical thinking (Ferguson & Fletcher, 1987).
Introverts use more independent and self-management strategies (Ehrman & Oxford, 1988).
Judgers reported more use of study strategies and attitudes than perceivers (Robyak & Patton, 1977).

This literature provides a background rationale for the four research questions that are addressed in this study:

1. Do student personality differences in stimulation-seeking/reducing or risk-taking/reducing correlate with differences in student use of learning strategies.

2. Are individual differences in learning strategy use related to individual differences in academic achievement?

3. Do differences exist in student use of learning strategies for a particular course versus courses in general?

4. Do gender differences exist in the use of learning strategies?

To evaluate these questions, subjects were asked to complete the T-17 Scale (reported by Farley) and the Motivated Strategies for Learning Questionnaire (MSLQ), developed by a team of researchers at the University of Michigan to assess motivation and the use of learning strategies. The T-17 Scale contains 17 questions designed to assess thrill-seeking, stimulation-seeking, and risk-taking. The MSLQ, originally consisting of one form, was adapted to add a Form B. The original form, for the present study labeled Form A, was designed to measure student use of learning strategies as

they pertain to particular courses students were enrolled in. The adapted form, Form B, was designed to measure the use of learning strategies as they pertained to students' courses *in general*. Because Type T is considered a personality *trait* (Farley, 1986, 1991) and traits are long-term stable phenomena, it was necessary to look at long-term strategy use as well as the short-term for which the MSLQ was originally designed. A complete listing of MSLQ sub-scales is provided in Table 2. In addition, subjects were asked to report their age, gender, and grade point averages. Grade point averages were used to represent academic achievement. The subjects involved in the analyses included 256 undergraduate students enrolled in an introductory educational psychology course at a large midwestern university.

To evaluate the relationship between Type T Personality and the use of learning strategies, primary and secondary analyses were examined. The primary analysis consisted of two principle components factor analyses with varimax rotations. The first factor analysis was computed to address the T, SEX, GPA, and 29 MSLQ subscale variables associated with Form A. The second factor analysis computed was to determine the relationship of the T, SEX, GPA and 29 MSLQ subscale variables associated with Form B. With Form A, eight factors with eigenvalues greater than one emerged from the factor analysis; with Form B, nine factors emerged from the analysis with eigenvalues greater than one. Of primary concern was the loading of the T variable on factors emerging from the analyses.

For the secondary analysis, a principle components factor analysis with varimax rotation was first computed using only the 29 MSLQ subscale averages (both forms). This analysis resulted in the arrangement of the 29 MSLQ subscales into a smaller number of factors. The factor analysis resulted in

the identification of seven factors with eigenvalues greater than one. Four regressions were then run (male, female, Form A, and Form B) in order to interpret how T predicted the MSLQ factors.

The results of the primary analysis suggested that there are differences in learning strategy use based on personality type. Big T students both in the short-term (this course) and in the long-term (all courses) were more likely to use high-level cognitive strategies. These strategies were considered to be relatively high-level because they included critical thinking, original thinking, elaboration, and metacognitive strategies. In contrast, in the short-term, Little t was related to external attribution, test anxiety, and selection strategies, considered relatively low-level strategies. (See Table 3.) The secondary analysis also supported these findings. Again, in both the short- and long-terms, Big T was related to the use of high-level cognitive strategies. (See Table 4.)

The results of this study did not indicate that Big T and Little t use of learning strategies was related to academic achievement. At no point did Type T and GPA load together, nor did correlational analysis reach significance. This may be a result of the sample selected for this study. Because all subjects are students at a large, fairly selective university, it is necessary for them to carry a certain minimum GPA in order to be admitted into the programs of study they desire.

The results of the primary analysis did suggest that differences exist in strategy use in the short-term versus the long-term. While in both the short- and long-terms, Big T was related to the use of high-level cognitive strategies and intrinsic motivation, Little t was related to external attribution and test-anxiety in the short-term only. In the secondary

analysis, Big T was related to the use of high-level cognitive strategies in the short- and long-terms. The most interesting differences found in the secondary analysis was that Little t loaded on Factor 2, labeled as lower-level cognitive strategies in the *long-term only*. The strategies which loaded with Little t on Factor 2 included rehearsal strategies, surface processing, environment management, and extrinsic goal orientation. One possibility for this is that it is the result of the long-term, stable personality trait of Little t emerging when questions are also related to long-term, over course, strategy use.

Finally, the results of this study provided a more clear picture of females than males. In the primary factor analysis, a factor emerged providing information relating to femaleness. In both the long- and short-terms, female was related to Little t, time and study management, selection strategies and help-seeking not seen as a threat to self esteem. Maleness did not load as a factor or with T in the primary analysis. The secondary analysis also provided a more clear picture of female/T use of strategies than male/T use. In the regression analysis, Factor 1, high-level cognitive strategies, entered for both female and male Big T's, In addition, Factor 5, internal attribution, entered for Big T females, and Factor T, external attribution, entered for Little t females. No relationship was found between males and attribution.

The present study helps to identify a "learning strategy profile" for Big T and Little t students (summarized in Table 5). The profile appears stronger in long-term, multi-course strategy use than in short-term, one-course strategy use. By examining traits found primarily in long-term, multi-course strategy use, we see Big T students emphasize high-level

cognitive strategies, including flexible thinking, original thinking, critical thinking, and are instrinsically motivated. Further studies may strengthen the finding that Little t students, in contrast, use more lower-level cognitive strategies including rehearsal, surface procession, and environment management, and are extrinsically motivated.

The establishment of learning strategy profiles helps to draw implications for educational practice. For students to be successful and effective in the use of learning strategies, they must know when, as well as how, to use them. Teachers, in turn, must be aware of the strategies students are most likely to use and the extent to which the strategies will meet the demands of the learning criteria. This examination of Type T Personality and the use of learning strategies suggests a learning strategy profile which specifically addresses the match between strategy use and individual learners. This information may enhance the ability of educators to effectively meet the needs of all students in their classrooms.

REFERENCES

Biggs, J.B. (1978). Individual and group differences in study processes. *British Journal of Educational Psychology, 48,* 226-279.

Campbell, J.B, & Hawley, C.W. (1982). Study habits and Eysenck's theory of extraversion-introversion. *Journal of Research in Personality, 16*(2), 139-146.

Entwistle, N.J., & Entwistle, D. (1970). The relationships between personality, study methods and academic performance. *British Journal of Educational Psychology, 40,* 132-143.

Ehrman, M., & Oxford, R. (1988). Effects of sex differences, career choice, and psychological type on adult language learning strategies. *The Modern Language Journal, 72,* 253-265.

Farley, F. (1985). Psychobiology and cognition: An individual differences model. In J. Strelau, F. Farley, & A. Gale (Eds.), *The biological bases of personality and behavior: Vol, I, Theories, measurement techniques and development.* New York: Hemisphere/McGraw-Hill International.

Farley, F. (1986). The big T in personality. *Psychology Today,*45-52.

Farley, F. (1991). The type-t personality. In L.P. Lipsitt, & L.L. Mitnick (Eds.), *Self-regulatory behavior and risk taking: Causes and consequences* (pp. 371-382). Norwood, NJ: Ablex.

Ferguson, J. & Fletcher, C. (1987). Personality type and cognitive style. *Psychological Reports, 60*,959-964.

Fourqurean, J.M., Meisgeier, C., & Swank, P. (1990). The link between learning style and Jungian psychological type: a finding of two bipolar preference dimensions. *Journal of Experimental Education, 58*(3), 225-237.

Weinstein, C.E., Goetz, E.T., & Alexander, P.A. (Eds.), (1988). *Learning and study strategies: Issues in assessment, instruction, and evaluation.* San Diego: Academic Press.

Table 1

Adaptive Education for Big T and Small t Students[1]

| Treatment | Big T | Small t |
|---|---|---|
| Instruction | Inductive Instruction | Deductive Instruction |
| | Discovery Learning | Expository Learning |
| | Fast Pace | Slow Pace |
| | Variable Pace | Fixed Pace |
| | Discussion Format | Lecture Format |
| | Student-Centered | Teacher-Centered |
| | Color Media | Black and White Media |
| Environment | Open Space | Traditional Self-Contained |
| | High Variety | Low Variety |
| | Complexity | Simplicity |
| | Bright Colors | Soft Colors |
| | High Activity | Low Activity |
| | Noisy | Quiet |
| Teacher | Type T | Type t |
| | Dramatic | Undramatic |
| | Lively | Less Lively |
| | Extrovert | Introvert |

[1]From Farley, F. (1986). The big T in personality. *Psychology Today*, pp. 45-52.

Table 2

LISTING OF MSLQ SUB-SCALES

MOTIVATION SCALES

1 Intrinsic goal orientation

2 Extrinsic goal orientation

3 Task value-interest

4 Task value-importance

5 Task value-utility

6 Internal-success control belief

7 Internal-failure control belief

8 External-success control belief

9 External-failure control belief

10 Perceived competence as a student

11 Self-efficacy for learning

12 Expectancy for success

13 Test anxiety-cognitive interference

14 Test anxiety-emotionality

COGNITIVE SCALES

15 Rehearsal strategies

16 Selection strategies

Table 2 (continued)

17 Organization strategies

18 Elaboration strategies

19 Metacognition-planning

20 Metacognition-monitoring

21 Metacognition-regulating

22 Surface processing

23 Critical thinking

24 Original thinking

RESOURCE MANAGEMENT SCALES

25 Time and study management

26 Study environment management

27 Effort management

28 Help-seeking behavior

29 Help-seeking threat to self-esteem

Table 3

Factors on Which Type T Loaded in Primary Analysis: Principal Components Factor Analysis with Varimax Rotation

| FORM A | | FORM B | |
|---|---|---|---|
| Associated Variables | Loading | Associated Variables | Loading |
| **FACTOR 1** | | **FACTOR 1** | |
| MSLQ23 | .848 | MSLQ19 | .800 |
| MSLQ19 | .776 | MSLQ18 | .800 |
| MSLQ24 | .745 | MSLQ24 | .777 |
| MSLQ18 | .669 | MSLQ23 | .748 |
| MSLQ1 | .610 | MSLQ17 | .716 |
| MSLQ21 | .590 | MSLQ20 | .662 |
| MSLQ20 | .533 | MSLQ21 | .642 |
| MSLQ17 | .525 | MSLQ1 | .481 |
| MSLQ27 | .484 | MSLQ26 | .414 |
| MSLQ26 | .440 | MSLQ10 | .392 |
| MSLQ11 | .385 | T | .360 |
| MSLQ10 | .376 | MSLQ27 | .315 |
| MSLQ12 | .314 | | |
| MSLQ4 | .307 | | |
| T | .310 | | |

Table 3 (continued)

| FORM A | | FORM B | |
|---|---|---|---|
| Associated Variables | Loading | Associated Variables | Loading |
| **FACTOR 4** | | | |
| MSLQ8 | .754 | | |
| MSLQ13 | .598 | | |
| MSLQ9 | .575 | | |
| MSLQ16 | -.625 | | |
| MSLQ14 | .390 | | |
| T | -.382 | | |
| MSLQ29 | .307 | | |
| **FACTOR 6** | | **FACTOR 5** | |
| SEX | .783 | SEX | .705 |
| T | -.583 | T | -.560 |
| MSLQ29 | -.492 | MSLQ29 | -.433 |
| MSLQ25 | .460 | MSLQ25 | .402 |
| MSLQ17 | .433 | MSLQ11 | -.402 |
| | | MSLQ16 | -.387 |

Table 4

Factors on Which Type T Loaded in Secondary Analysis: Principal Components Factor Analysis with Varimax Rotation

| Associated Variables | Loading | Associated Variables | Loading |
|---|---|---|---|
| **FACTOR 1** | | **FACTOR 2** | |
| MSLQ23 | .817 | MSLQ15 | .719 |
| MSLQ19 | .791 | MSLQ2 | .710 |
| MSLQ24 | .777 | MSLQ22 | .675 |
| MSLQ18 | .748 | MSLQ26 | .544 |
| MSLQ17 | .645 | MSLQ27 | .523 |
| MSLQ21 | .599 | MSLQ25 | .498 |
| MSLQ20 | .591 | MSLQ14 | .432 |
| MSLQ1 | .556 | MSLQ12 | .351 |
| MSLQ26 | .441 | MSLQ17 | .333 |
| MSLQ10 | .401 | | |
| MSLQ27 | .396 | | |
| MSLQ11 | .329 | | |
| MSLQ4 | .316 | | |

Table 4 (continued)

| Associated Variables | Loading | Associated Variables | Loading |
|---|---|---|---|
| **FACTOR 3** | | **FACTOR 4** | |
| MSLQ3 | .847 | MSLQ11 | .672 |
| MSLQ5 | .845 | MSLQ12 | .645 |
| MSLQ4 | .672 | MSLQ10 | .593 |
| MSLQ1 | .493 | MSLQ16 | .579 |
| MSLQ10 | .393 | MSLQ14 | -.527 |
| MSLQ25 | .373 | MSLQ13 | -.497 |
| MSLQ12 | .321 | MSLQ20 | .327 |
| **FACTOR 5** | | **FACTOR 6** | |
| MSLQ7 | .843 | MSLQ8 | .798 |
| MSLQ6 | .732 | MSLQ9 | .540 |
| MSLQ9 | -.504 | MSLQ13 | .426 |
| | | MSLQ2 | .420 |
| **FACTOR 7** | | | |
| MSLQ29 | .828 | | |
| MSLQ28 | -.601 | | |

Table 5

Learning Strategy Profiles

| Big T | Little t |
|---|---|
| Use higher level cognitive strategies | Use lower level cognitive strategies |
| Original thinking | Surface processing |
| Critical thinking | Rehearsal strategies |
| Metacognition | Environment management |
| Intrinsic goal orientation | External attribution |
| High self-efficacy for learning | Test anxiety |
| Help-seeking behavior seen as threat to self esteem | |

| Female Big T | Female Little t |
|---|---|
| Use higher level cognitive strategies | Use environment management strategies |
| Use selection strategies | Do not use selection strategies |
| Higher self-efficacy for learning | Lower self-efficacy for learning |
| | Help-seeking not seen as threat to self-esteem |

Table 5 (continued)

| Male Big T | Male Little t |
|---|---|
| Use higher level cognitive strategies | No information provided in this study about Male Little t strategy use |
| No information provided in this study about male attribution | |